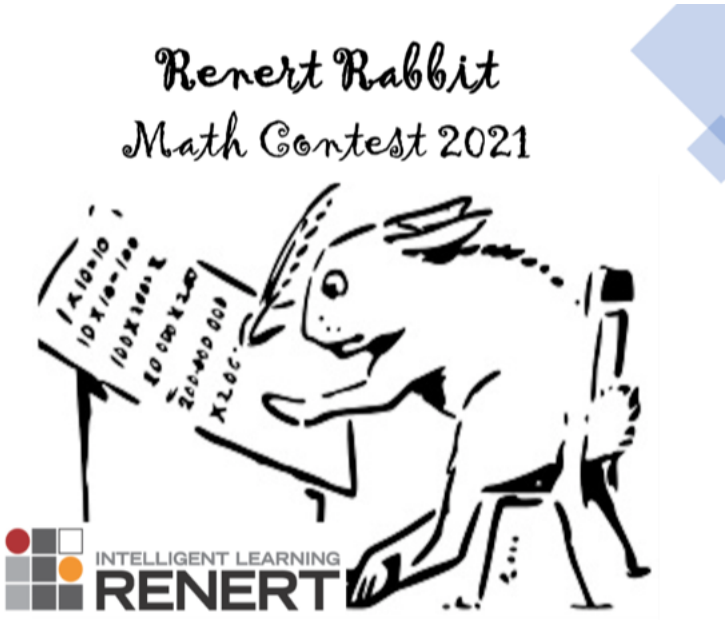
Renert Rabbit **Name (Print):** _____
Gr 4
March 26–27, 2021



Instructions:

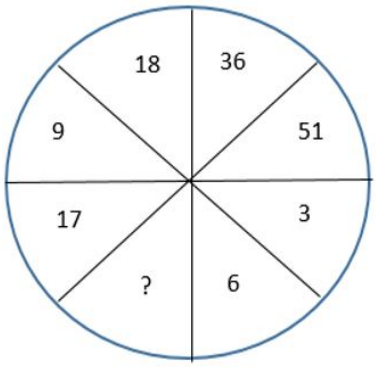
1. Do not open this booklet until you are told by your teacher to begin.
2. Materials: pencil, paper — no other materials. NO calculators!
3. You will have exactly **60 minutes** to work on the contest.
4. This is a multiple-choice contest. Each question is followed by five possible answers marked A, B, C, D, and E. Only one of the options is correct. After making your choice, fill it in the appropriate circle on the response form.
5. This form has 9 questions in Part A, 9 questions in Part B, and 5 questions in Part C.
6. Scoring:
   - Each correct answer is worth:
     - 3 points in Part A,
     - 4 points in Part B,
     - 6 points in Part C.
   - Each unanswered question is worth 1 point.
   - Incorrect answers are worth 0 points.

Part A (3 points each)

1. Solve the following: $(3+6)^2 - 4^2$

   (A) 5 (B) 25 (C) 29 (D) 65 (E) 97

2. What number should replace the question mark?

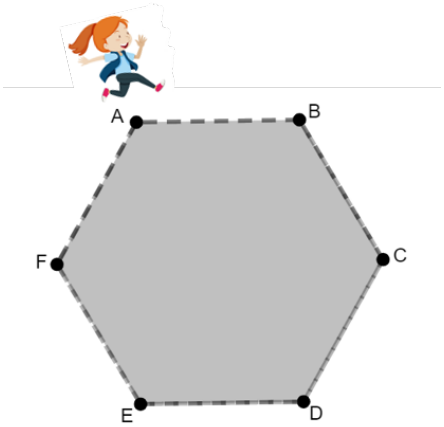


   (A) 2 (B) 3 (C) 11 (D) 12 (E) 25

3. $1 + 2 \times 3 + 4 \times 5 + 6 \times 7 + 8 \times 9 =$?

   (A) 45 (B) 55 (C) 140 (D) 141 (E) 4545

4. Berlin runs clockwise around a hexagon starting at corner A where she lives and passes 18 corners (including the corner A, where she started). If each side of the hexagon is 100 meters long, how many meters did Berlin run?



   (A) 1200 (B) 1700 (C) 1800 (D) 1900 (E) 2400

5. Two numbers are called "friends" if reversing the digits of one number gives the other number. For example, the numbers 234 and 432 are friends and the numbers 5882 and 2885 are also friends. Find the difference between 2021 and its friend.

   (A) 100 (B) 819 (C) 821 (D) 1001 (E) 1000

6. What is one-half plus one-third plus one-quarter?

   (A) $\frac{1}{12}$ (B) $\frac{1}{9}$ (C) $\frac{1}{3}$ (D) $\frac{5}{6}$ (E) $\frac{13}{12}$

7. How many different combinations can be made with a 4-digit combination lock if each of the four digits could be any number from 1 to 9?

   (A) 36 (B) 3024 (C) 5040 (D) 6561 (E) 10000

8. Which of the following numbers is a prime number?

   (A) 35 (B) 51 (C) 67 (D) 77 (E) 91

9. $\triangle = ?$

$$\begin{aligned} \square - \bigstar &= 10 \\ \bigstar + \bigstar + \bigstar &= 24 \\ \triangle - \square &= 15 \end{aligned}$$

   (A) 3 (B) 13 (C) 25 (D) 28 (E) 33

Part B (4 points each)

10. There are 125 rabbits which are either white or brown. White rabbits live in families of 11 and brown rabbits live in families of 8. How many families of white rabbits are there?

    (A) 4 (B) 5 (C) 6 (D) 7 (E) 8

11. What is the sum of all the integers from 20 to 30:

$$20 + 21 + 22 + \ldots + 29 + 30?$$

    (A) 122 (B) 250 (C) 255 (D) 275 (E) 300

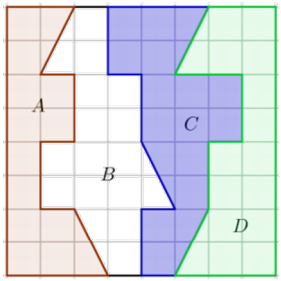
12. Samira began writing the numbers $1, 2, 3, 4, \ldots$ and stopped at 50. How many times did she write the digit 2?

(A) 1 (B) 13 (C) 14 (D) 15 (E) 25

13. Which of these numbers does not give a remainder of 5 when divided by 6?

(A) 1007 (B) 2021 (C) 3035 (D) 5005 (E) 5039

14. The following square is divided into 4 pieces: A, B, C, and D. Which two pieces have the same area?



(A) A and B (B) A and C (C) A and D (D) B and C (E) B and D

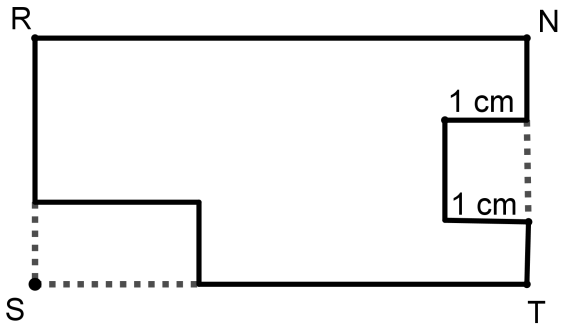
15. What is $1 - \frac{1}{20} + \frac{1}{21}$?

(A) $\frac{1}{41}$ (B) $\frac{1}{21}$ (C) $\frac{419}{420}$ (D) $\frac{421}{420}$ (E) $1\frac{2}{420}$

16. Some telephones have letters on them. Companies like to use words to help their customers easily remember their phone numbers. To use it, you would enter the number on which the letter is found. For example, 1-800-TEACHER would be 1-800-832-2437. Which of the following words could be spelt by pressing 738876?

(A) RENERT (B) SCHOOL (C) SATURN (D) RETURN (E) RABBIT

17. The perimeter of the rectangle $RNTS$ is 43 cm. Deven cut off two rectangles as shown.



What is the new perimeter after cutting?

(A) 41 cm (B) 43 cm (C) 44 cm (D) 45 cm
(E) Cannot be solved – not enough information

18. Ms. Marina's rabbits, Night and Pipper, are sleeping on the sofa. Night was lying on the sofa first, and Pipper used 1/4 of the rest of it. The rabbits left exactly half of the sofa for Ms. Marina to sit on. What fraction of the sofa did Pipper use?

(A) 1/12 (B) 1/8 (C) 1/6 (D) 1/4 (E) 1/3

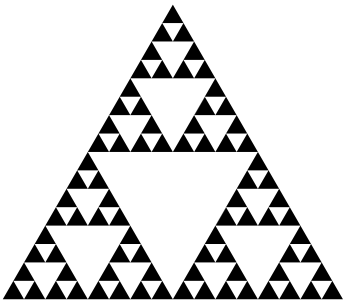
Part C (6 points each)

19. What number should go in the box?

$$3+2\left(5+\cfrac{46}{47-\cfrac{60}{62-\cfrac{8}{\square-5}}}\right)=15$$

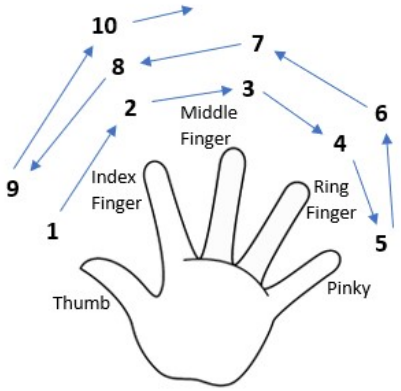
(A) 5 (B) 6 (C) 7 (D) 9 (E) 13

20. Jeena created this beautiful fractal made of equilateral triangles. Each triangle has its vertices in the middle point of the larger one side. If the area of each black triangle is 1, what is the area of the largest white triangle?



(A) 3 (B) 9 (C) 16 (D) 32 (E) 64

21. During a long train ride, Aydin invented an activity where he would count the fingers on his left hand back and forth. He started counting on his left thumb to his left pinky, then back to his thumb, and so on. He will never touch the same finger on two consecutive numbers. Which finger will he land on when he counts 100?



(A) Thumb (B) Index Finger (C) Middle Finger (D) Ring Finger (E) Pinky

22. Mrs. Wang put 19 apples into 3 baskets and wrote on each basket the number of apples that are in it. One of the baskets has 3 times as many apples as another basket. One of the baskets has 4 times as many apples as another basket. If Mrs. Wang adds all of the digits on all of the baskets, what would she get?

(A) 7 (B) 9 (C) 10 (D) 19
(E) Impossible to tell

23. The sum of the digits of a three-digit number is 26. The three-digit number is increased by 1. Which of the following could be the sum of the digits of the new number?

(A) 3 (B) 9 (C) 10 (D) 19 (E) 25